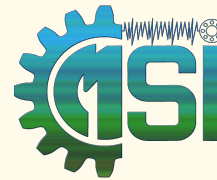




NATIONAL CONFERENCE ON CONDITION MONITORING 2025 (NCCM-2025)



27–28 November, 2025 • New HAL Management Academy Auditorium,
Bengaluru

www.comsoi.org | convener.nccm2025@gmail.com

Day 1 [Thursday, 27 NOV 2025]

08:15–09:15 (60 min) — Registration — (Entrance Walkway)

09:15–11:00 (105 min) — Inaugural Ceremony

Hosts for the Ceremony:

- Mrs. Rashmi Rao, Sc F, GTRE
- Mr. Sugun Daniel Coelho, TO C, GTRE

09:15–09:25 (10 min)	Assembly & Seating of Invitees and Delegates
09:25–09:30 (5 min)	Arrival & Welcoming of Guests & Dignitaries
09:30–09:40 (10 min)	Lighting of Lamp & Invocation • Invocation by: Shri Bharathan RD, Sc F, GTRE
09:40–09:50 (10 min)	Welcome Address & Conference Overview • Dr. Sanjay Barad, OS, GTRE & Convener, NCCM-2025
09:50–10:00 (10 min)	Address by Chairman NCCM-2025 • Dr. SV Ramana Murty, OS & Director, GTRE
10:00–10:10 (10 min)	CMSI Presidential Address • Shri PVS Ganesh Kumar, OS (Retd.), NSTL & President, CMSI
10:10–10:20 (10 min)	Address by Guest of Honour • Dr. (Mrs.) K Rajalakshmi Menon, DS & DG (Aero)
10:20–10:25 (5 min)	Release of Souvenir
10:25–10:35 (10 min)	CMSI Awards / Certificates / Fellowships Distribution • Coordinated by Dr. T Venkata Ratnam, General Secretary, CMSI
10:35–10:45 (10 min)	Address by Chief Guest • Dr. Samir V Kamat, Secretary DDR&D and Chairman, DRDO
10:45–10:50 (5 min)	Vote of Thanks
10:50–11:00 (10 min)	Group Photograph

11:00–11:30 (30 min) — High Tea — (Cafeteria)

11:30–13:30 (120 min) — Keynote Session

Chair: Shri M. Z. Siddique, Former DG (Aero) & DG (Naval Systems & Materials), DRDO

11:30–12:10 (40 min)	Keynote Keynote Talk - 1: Role of IVHM in Transforming Aero Engine Reliability • Dr. Vivek Sanghi, Former Scientist, GTRE & Technical Advisor, Nabhdrishti Aerospace
----------------------	---

12:10–12:50 (40 min)	Keynote Keynote Talk - 2: MEMS Pressure and other Transducers for Defence /Space Applications and Testing Philosophy • <i>Dr. Manjunatha M Nayak, Professor Emeritus, IISc, Bangalore</i>
12:50–13:30 (40 min)	Keynote Keynote Talk - 3: Maintenance Excellence Journey in Tata Steel • <i>Mr. Ved Prakash Thakur, Chief of Mechanical Maintenance, Tata Steel</i>

13:30–14:30 (60 min) — Lunch Break — (Cafeteria)

14:30–16:00 (90 min) — Parallel Sessions Block 1

Time	Parallel Session-1A: AI & ML in Condition Monitoring Auditorium [Chair: Dr. A Viswanatha Rao, OS (Retd.), GTRE, DRDO]	Parallel Session-1B: Oil Analysis/MCSA/Ultrasonics Hall-A [Chair: Shri Shivanath Ram, Head (Asset Maintenance), Jindal Steel]
14:30–14:45 (15 min)	Paper NCCM2025-ABS-050: Data Validation and Fault Classification in Testing of Aero Engines Using Machine Learning • <i>Poornachandra Giridhar, IIT, Tirupati</i>	Paper NCCM2025-ABS-030: AIoT-enabled Oil Analytics for Predictive Maintenance in Industrial Assets • <i>Harshit Agrawal, Minimac Systems Pvt. Ltd.</i>
14:45–15:00 (15 min)	Paper NCCM2025-ABS-027: AI for Bearing Fault Diagnosis • <i>Sujith R, PES University, Bengaluru</i>	Paper NCCM2025-ABS-017: Correlation of MCSA and Vibration Signatures for Motor Condition Assessment • <i>B. Koteswar Rao, Electrosteel Castings Ltd., Srikalahasthi, Andhra Pradesh</i>
15:00–15:15 (15 min)	Paper NCCM2025-ABS-043: Artificial Intelligence for Bearing Fault Detection Using Effective Features from Current Signa... • <i>G Geetha, Vellore Institute of Technology, Vellore, Tamil Nadu</i>	Paper NCCM2025-ABS-033: Predictive Analysis of Jet Fuel Dilution with Synthetic Oil in Developmental Testing of Aero En... • <i>S Suresh Babu, Gas Turbine Research Establishment (DRDO), Bengaluru</i>
15:15–15:30 (15 min)	Paper NCCM2025-ABS-037: Integration of Data Decomposition and Deep Learning for Automatic Condition Monitoring of Fans ... • <i>Sundari Tribhuvanam, Atria Institute of Technology, Bengaluru</i>	Paper NCCM2025-ABS-012: Defect Elimination in Coated Steel by Ultrasonic Leak Detection Technique - Case Study from Str... • <i>Rakesh Ranjan, Tata Bluescope Steel, Jamshedpur</i>
15:30–15:45 (15 min)	Paper NCCM2025-ABS-010: Simulation-driven Digital Twin for Condition Monitoring of Rotating Machinery under Industry 4.... • <i>Sree Rama Meraka, Raghu Engineering College, Visakhapatnam</i>	Paper NCCM2025-ABS-047: Diagnosis and Simulation of Fuel Control System Malfunction Caused by Hydraulic Contamination i... • <i>Pawan Kumar, Gas Turbine Research Establishment (DRDO), Bengaluru</i>
15:45–16:00 (15 min)	Paper NCCM2025-ABS-057: Engine Thrust Prediction Using ML Models • <i>Nagendra Prasad Kumble, Radome Technologies & Services</i>	Paper NCCM2025-ABS-029: Exploring the Role of Flushing in Enhancing Gas Turbine Reliability and Performance • <i>Anshuman Agrawal, Minimac Systems Pvt. Ltd.</i>

16:00–16:30 (30 min) — Tea Break — (Cafeteria)

16:30–17:30 (60 min) — Parallel Sessions Block 2

Time	Parallel Session-2A: Vibration Monitoring Auditorium <i>[Chair: Shri Probal Ghosh, Vice President, Tata Steel, Jamshedpur]</i>	Parallel Session-2B: NDT & Root Cause Analysis Hall-A <i>[Chair: Dr. VVS Bhaskara Raju, Sc G (Retd.), NSTL, Visakhapatnam]</i>
16:30–16:45 (15 min)	Paper NCCM2025-ABS-009: Optimizing Coal Mill Downtime by Early Detection of Main Reducer Gearbox Bearing Deterioration • <i>Hemant Bari, Adani Power Ltd, Mumbai</i>	Paper NCCM2025-ABS-015: Root Cause Analysis of a Crack Propagation Detected by Ultrasonic Test of a Hot Metal Trolley A... • <i>Dr. Rana Dutta, Electrosteel Castings Ltd., Srikalahasthi, Andhra Pradesh</i>
16:45–17:00 (15 min)	Paper NCCM2025-ABS-011: Eliminating Infant Mortality Failure of Rotating Equipment by Online Vibration Monitoring Case ... • <i>Premangshu Saha, Tata Bluescope Steel, Jamshedpur</i>	Paper NCCM2025-ABS-046: Combined Cyclic Life and Reliability Model for HCF Onset in Gas Turbine Blades • <i>B.V.A. Patnaik, Nabhdrihti Aerospace Ltd., Bengaluru</i>
17:00–17:15 (15 min)	Paper NCCM2025-ABS-055: HBNFR: Improving Asset Performance by Identifying Incipient Bearing Defect • <i>Sudip Kumar Mukherjee, Tata Steel Limited, Jamshedpur</i>	Paper NCCM2025-ABS-054: AI-Driven Gas Turbine Blade Inspection and FOD Damage Assessment Using Object Detection and Dep... • <i>Srinivasan R, Defence Institute of Advanced Technology, Pune</i>
17:15–17:30 (15 min)	Paper NCCM2025-ABS-056: Failure Analysis of Base Plate of Unbalance Motor of Vibratory Feeder • <i>Aditya Jain, Tata Steel Limited, Meramandali</i>	Paper NCCM2025-ABS-001: Effect of Blower Position on Vibration Levels in Marine Platforms: An Experimental Approach • <i>Udayanand K, NSTL (DRDO), Visakhapatnam</i>

17:30–18:30 (60 min) — EC Meeting for EC Members followed by GB Meeting for all CMSI members — (Hall-A)

18:30–19:30 (60 min) — Cultural Program: Antardhwani

19:30–21:30 (120 min) — Networking & Dinner — (Cafeteria)

Day 2 [Friday, 28 NOV 2025]

09:00–10:30 (90 min) — Plenary Talks

Chair: Dr. V Bhujanga Rao, Former DG (Naval Systems & Materials), DRDO

09:00–09:30 (30 min)	Plenary Talk 1 A Deep Learning based Physics informed Neural ODE Approach for Vibration Analysis of a Misaligned Geared Rotating Machine • Prof Rajiv Tiwari, IIT, Guwahati
09:30–10:00 (30 min)	Plenary Talk 2 & Dr. M Ananda Rao Memorial Lecture Reliability of Complex Engineered Systems • Dr. Edwin Vijay Kumar, Professor, Gayathri Engineering College, Visakhapatnam
10:00–10:30 (30 min)	Plenary Talk 3 Real time Vibration Monitor and Diagnostics • Mr. Krishna Dutt, GM(Retd), BHEL R&D, Hyderabad

10:30–11:00 (30 min) — Tea Break — (Cafeteria)

11:00–12:30 (90 min) — Parallel Sessions Block 3

Time	Parallel Session-3A: RUL Prediction & Prognosis Auditorium [Chair: Dr. BVA Patnaik, OS (Retd.), GTRE]	Parallel Session-3B: Vibration Control & Testing Hall-A [Chair: Shri TN Suresh, Sc G (Retd.), GTRE, Banaglore]
11:00–11:15 (15 min)	Paper NCCM2025-ABS-041: RULXAI: Remaining Useful Life Prediction for Aircraft Engines with Explainable AI • Siddharth Radhakrishnan, SRM Institute of Science and Technology, Chennai	Paper NCCM2025-ABS-034: Strengthening Subsea Pipeline Lifespan and Integrity with ECTMD Technology: Controlling Vibrati... • Bala Murugan S, NIT, Rourkela
11:15–11:30 (15 min)	Paper NCCM2025-ABS-004: RUL Prediction in Aerospace Propulsion Systems Using Keras-Based Hyperparameter-Tuned LSTM Netw... • Roz Luther Meesala, JNTU, Kakinada	Paper NCCM2025-ABS-044: Modeling and Vibration Analysis of BLDC Motor and MR Damper • Prof. MRS Satyanarayana, GITAM School of Technology, Visakhapatnam
11:30–11:45 (15 min)	Paper NCCM2025-ABS-032: Prognostics Models for RUL Estimation in Rotatory Machinery: A Brief Exposition • K.R.S. Durga, JNTU, Kakinada	Paper NCCM2025-ABS-040: Active Control of Geometrically Nonlinear Vibration of Composite Beams Using Macro-fibre Compos... • Dhruva Biswas, Gas Turbine Research Establishment (DRDO), Bengaluru
11:45–12:00 (15 min)	Paper NCCM2025-ABS-048: Hybrid LLM-ML Framework for Remaining Useful Life Prediction of Turbofan Engines • Sougata Sen, Defence Institute of Advanced Technology, Pune	Paper NCCM2025-ABS-039: Control of Fan Blade Resonance Response Using Optimization of Inlet Guide Vane Schedule • Owais Majid Kamili, Gas Turbine Research Establishment (DRDO), Bengaluru

12:00–12:15 (15 min)	Paper NCCM2025-ABS-052: Virtual Sensors for Fault-Tolerant RUL Prediction in Turbofan Engines: An Empirical Evaluation • <i>Malhar Vedak, Defence Institute of Advanced Technology, Pune</i>	Paper NCCM2025-ABS-031: From Resonance to Reliability: A Case Study on Vibration Reduction in Acid Recirculation Fan • <i>Maruti Nayak, One SSTG, Tata Steel Limited, Kalinga Nagar</i>
12:15–12:30 (15 min)	Paper NCCM2025-ABS-003: Integration of EMD and Bi-Spectrum Techniques Within CNN-LSTM Framework for Enhanced Bearing Fa... • <i>Varshini S, Atria Institute of Technology, Bengaluru</i>	Paper NCCM2025-ABS-021: Characterization of Metal 3D Printed Fixture through Vibration Analysis • <i>Rikesh Prajapati, NSTL (DRDO), Visakhapatnam</i>

12:30–12:40 (10 min) — Break for 10 Minutes: Reassemble in Main Auditorium

12:40–13:25 (45 min) — Invited Talks

Chair: Dr. K. Ramachandra, Former Director, GTRE, DRDO

12:40–12:55 (15 min)	Invited Talk 1 Development of DT Framework for Aero Gas Turbine Engine Health and Usage Monitoring System (HUMS) • <i>Mr. Rohit Chauhan, Co-Founder & CEO, Nabhdrishti Aerospace, Bengaluru</i>
12:55–13:10 (15 min)	Invited Talk 2 Online Oil Condition Monitoring Technology • <i>Mr. Dinesh Jain, WRT India</i>
13:10–13:25 (15 min)	Invited Talk 3 Indigenization of MIL Grade Connectors- A Case Study: “Indigenized D38999SIII Connectors for Airborne Applications” • <i>Mr. Girish Nilange, GM, Sales & Marketing, Rotory Connectors Pvt. Ltd.</i>

13:30–14:30 (60 min) — Lunch Break — (Cafeteria)

14:30–15:45 (75 min) — Parallel Sessions Block 4

Time	Parallel Session-4A: Gas Turbines/Engines Health Monitoring Auditorium [Chair: Shri Sanjawadmath VG, Sc G, GTRE, Bangalore]	Parallel Session-5B: Maintenance 4.0 & Process Monitoring Hall-A [Chair: Dr. Rana Dutta, CBM Consultant, Electrosteel Castings Ltd., Srikalahasthi]
14:30–14:45 (15 min)	Paper NCCM2025-ABS-014: Integration of Military and Industrial Protocols for Aero Engine Control System Health Monitori... • <i>Karan Deep, Gas Turbine Research Establishment (DRDO), Bengaluru</i>	Paper NCCM2025-ABS-024: Consolidating Equipment Management Base for Asset Diagnostics & AI Interface - Maintenance 4.0 ... • <i>Anoop Saxena, Asset Management Consultant</i>
14:45–15:00 (15 min)	Paper NCCM2025-ABS-053: DEEPONET-Based Virtual Sensing for Fault-Tolerant Remaining Useful Life Prediction in Aircraft ... • <i>Diksha, Defence Institute of Advanced Technology, Pune</i>	Paper NCCM2025-ABS-005: A Computational Framework for Effective Bearing Fault Diagnosis and Prognosis • <i>K.R.S. Durga, JNTU, Kakinada</i>

15:00–15:15 (15 min)	Paper NCCM2025-ABS-042: AI Based Chatbot for Naval Gas Turbine Diagnostics • <i>Mantosh Bhattacharya, Petrofac Ltd.</i>	Paper NCCM2025-ABS-036: Investigation of Erosion in the Single and Multiphase Flow of an Offshore Submerged Pipeline Mo... • <i>Bala Murugan S, NIT, Rourkela</i>
15:15–15:30 (15 min)	Paper NCCM2025-ABS-051: Assessment of Structural Integrity of Gas Turbine Rotor Support System Through Vibration Based ... • <i>Manish Kumar, Gas Turbine Research Establishment (DRDO), Bengaluru</i>	Paper NCCM2025-ABS-045: Real-time In-situ MIG Welding Process Monitoring Using LDR Sensor: A Case Study • <i>Mayank Patel, Central Manufacturing Technology Institute, Bengaluru</i>
15:30–15:45 (15 min)		Paper NCCM2025-ABS-035: Experimental Investigation Of Optimum Tip Mass For Piezoelectric Vertical Beam Vibration Energy... • <i>Prathap Kumar A M, Government Engineering College, Koppal, Karnataka</i>

15:45–16:15 (30 min) — Panel Discussion

Chair: Prof. Nalinaksh S. Vyas, Professor Emeritus, Dept. of Mechanical Engg., IIT Kanpur

15:45–16:15 (30 min)	Panelists <ul style="list-style-type: none"> • Shri PVS Ganesh Kumar, OS (Retd.), NSTL & President, CMSI • Prof. Rajiv Tiwari, Professor, IIT Guwahati • Dr. A Viswanatha Rao, OS (Retd.), GTRE, DRDO • Shri Krishna Dutt, GM (Retd.), BHEL R&D, Hyderabad
-----------------------------	---

16:15–16:35 (20 min) — Valedictory Session: Feedback & Event Conclusion

16:40–17:00 (20 min) — High Tea & Departure — (Cafeteria)